

Melanism in the Larvae of *Abraxas grossulariata* Stephens

By M. L. STREET

Department of Biology, Shenstone New College, Burcot Lane,
Bromsgrove, Worcestershire

Melanism is frequently found in lepidopterous larvae although it has not received as much attention as adult melanism. Heslop-Harrison (1932) records it in 20 species mostly within the family Geometridae. Black larvae of *Abraxas grossulariata* were first recorded in the county of Tyne and Wear as early as 1894 (Buckler, Ray Society). All later records were also from this region except for one record from Bromley, Kent (Adkin, 1905). Apart from the description by Buckler, all other authors make only a casual mention of intermediate forms. Most interest was not in the larvae themselves but in the possibility of obtaining adult aberrations from them. It is the purpose of this article to record that *A. grossulariata* has established a permanent polymorphism in its larvae in the county of Tyne and Wear and to describe some intermediate forms.

All records in the North-East of England are from industrial areas. I have records from Tynemouth and Newcastle and other authors record black larvae from Blaydon, Birtley and Durham. The distribution seems to be localised and any records outside these areas would be of interest.

In all cases the first instar is cream and it is not until the second instar that it develops the black markings that are maintained throughout the rest of larval life. The normal colouration in side view is of alternating black and cream areas (Fig. 1) producing a chequerboard effect. There are black rectangles on the dorsal surface and from side view these are followed by black dashes, followed by two further lines of black rectangles with a red stripe between them. On the ventral surface are two continuous black lines separated by a mid-ventral cream line which becomes broader and red between the legs. The first segment behind the head is also reddish. The completely melanic larvae and the intermediate forms occur when the black areas join up antero-posteriorly and spread dorso-ventrally to obliterate the cream areas. Stokoe (1948) states that there is a "completely melanic form save for a broken yellow colour immediately behind the head". The specimen in Fig. 1 was the nearest to a completely black form seen by the author. It had no yellow collar but there was still the red stripe between the legs.

A sample of 30 full-grown larvae were taken off Black-currant bushes. Most of the larvae appeared to be superficially normal, but a closer examination showed that this was far from true. The degree of melanism was recorded in the table below and was based on the degree of expansion of the black areas antero-posteriorly to join and form a band. The black areas were labelled 1-4 beginning with the dorsal black patches and ending with those beneath the red stripe.

TABLE 1
Degree of Melanism

	A	B	C	D	E	
	Black or nearly so	1, 2, 3 & 4 in bands + heavy dorso-ventral expansion	1, 2, 3 & 4 joined	3 & 4 or 2 & 4 joined	4 only joined	Normal
No.	4	0	7	2	10	7
%	13.3	0	23.3	6.7	33.3	23.3

Less than a quarter were normal, although in the first instance over half appeared so. In other samples the numbers of A, B, C & D were higher and it may be that the records of very creamy larvae (Walker, 1904) were in fact the odd normal larvae among a very high percentage of melanic forms. A typical category B larvae is shown in Fig. 2. Here the black areas have expanded dorso-ventrally to almost obliterate the cream ground colour.

All the adults from these larvae were normal and matings produced a very high percentage of larvae which showed some degree of melanism. This indicates that this melanism is a Mendelian dominant character confined to the larva. Melanism is, of course, also found in adult *A. grossulariata* but this is a separate phenomenon.

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References

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Nigerian Tineidae—Including Two Species New to Science and Four Species New To Nigeria

By K. P. BLAND

63 Charterhall Grove, Edinburgh, EH9 3HT

A small accumulation of microlepidoptera collected at light in Nigeria contained only eleven species of Tineidae, but four